



COE REUSE MODEL (COREMOD)



OBJECTIVE

Develop a model for estimating the costs, cost savings, and cost avoidance of using the COE as the basis for building systems.

- **Orientation-** For program managers considering subscribing to COE or looking for economic impacts of using COE
- **Usability-** Developed and implemented in MS Excel 97 spreadsheet format.



USER ASSUMPTIONS

COREMOD is based on the assumption that the user knows, or can estimate, the following information about the system:

- **System top-level functions**
- **Estimated SLOC or man/months**
 - **Source lines of code**
 - **Development time - defined in man/months**
- **Amount budgeted to project**



BASIC FOUNDATION

Model uses COCOMO II and Reuse concepts as basic foundation

- **COCOMO II serves as the baseline with some modification**
 - **Basic Equation: $\text{Person Month (PM)} = A(\text{SLOC})^b$**
 - **Source Lines of Code (SLOC) - basic building block**
 - **Exponent “b” = Scaling drivers**
 - **Model provides a flexibility to customize.**
 - **Coefficient “A” = Multiplier effect based on increasing size of project.**
 - **Currently uses mid range default of 2.45**
 - **Customization not available in current version of model**



MODEL: Basic Foundations (cont)

- **Reuse Factor = 20.0%**
 - **Factor determine from research of existing literature on software reuse.**
 - **Can refine as data is made available from developers.**



FUTURE ENHANCEMENTS

- **Enable ability to customize Effort Multipliers**
- **Add Maintenance and Defects Effects**
- **Add Function Points, Object Points**
- **Collection of User Experience Data for Validation**
- **Refinement of Model Usability**



POINTS OF CONTACT

- **Bernie Sharum**
(703) 681-2137
DSN 761-2137
sharumb@ncr.disa.mil

- **Ken Linker**
(703) 681-2180
DSN 761-2180
linkerk@ncr.disa.mil



BACK-UP SLIDES



SCALING DRIVERS

- **Precedentedness**
- **Development Flexibility**
- **Risk Resolution**
- **Team Cohesion**
- **Process Maturity**



EFFORT MULTIPLIER

- **PRODUCT RELIABILITY & COMPLEXITY**
- **REQUIRED REUSE**
- **PLATFORM DIFFICULTY**
- **PERSONNEL CAPABILITY**
- **PERSONNEL EXPERIENCE**
- **FACILITIES**
- **SCHEDULE**